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ABSTRACT

This paper reports on an examination of the strategies that one of the researchers (Donovan), then a first-grade teacher, modeled while reading information books aloud in class. Returning to previously tape-recorded read aloud sessions, the researchers studied student and teacher responses during the reading of six storybooks and six information books, considering whether the different genres prompted different types of participant interactions. The researchers found that interactive information book read alouds may lead children to engage in more meaning-making efforts than storybooks do. The interactive information book read alouds provided context for scaffolding, modeling, and engaging in direct instruction of comprehension; this context also offered opportunities for students to engage interactively in discussion designed to clarify concepts and construct meaning. The paper stresses that developing an interactional stance during reading is critical to promoting comprehension acquisition. Comprehension acquisition, which would preclude actual comprehension instruction, is a subconscious process in which children absorb strategies via modeling by adults. This period would begin in preschool and continue into second grade and could make children more receptive to later formal comprehension instruction. Informational texts are useful choices in these cases because they emphasize construction of concepts. The paper calls for future research to examine the nature of comprehension acquisition and for research in teacher training for both comprehension acquisition and instruction. Contains 120 references. (NKA)

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REPORT

# The Contexts of Comprehension

## Information Book Read Alouds and Comprehension Acquisition

Laura B. Smolkin, University of Virginia
Carol A. Donovan, University of Alabama

U.S. DEPARTMENT OF EDUCATION
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# The Contexts of Comprehension: Information Book Read Alouds and Comprehension Acquisition

**CIERA REPORT #2-009**

Laura B. Smolkin, University of Virginia
Carol A. Donovan, University of Alabama

**CIERA Inquiry 2: Home and School**
**How can we promote comprehension acquisition in young children? What instructional activities enhance children's skill at reading and comprehending informational text?**

In this paper, Smolkin and Donovan examine the strategies Donovan, then a first-grade teacher, modeled while reading information books aloud in class. Returning to previously tape-recorded read aloud sessions, the authors studied student and teacher responses during the reading of six storybooks and six information books. They considered whether the different genres prompted different types of participant interactions. The authors found that interactive information book read alouds may lead children to engage in more meaning-making efforts than storybooks do.

The interactive information book read alouds provided a context for scaffolding, modeling, and engaging in direct instruction of comprehension. This context also offered opportunities for students to engage interactively in discussions designed to clarify concepts and construct meaning. The authors stress that developing an interactional stance during reading is critical to promoting comprehension acquisition.

Comprehension acquisition, which would precede actual comprehension instruction, is a subconscious process in which children absorb strategies via modeling by adults. This period would begin in preschool and continue into second grade, and could make children more receptive to later formal comprehension instruction. Informational texts are useful choices in these cases because they emphasize construction of concepts.

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# The Contexts of Comprehension: Information Book Read Alouds and Comprehension Acquisition

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Carol A. Donovan, University of Alabama

In their executive summary of *Preventing Reading Difficulties in Young Children* (PRD), Snow, Burns, and Griffin (1998) identify "three potential stumbling blocks that are known to throw children off course on the journey to skilled reading" (p. 4). The first of these, understanding and using the alphabetic principle, is presently receiving considerable national attention (but, see Allington & Woodside-Jiron, 1999, for an interesting political analysis of this attention). The third of these, motivation to read, was the focus of much of the recent research completed by the federally funded National Reading Research Center (e.g., Baker & Wigfield, 1999; Guthrie & Alvermann, 1999; Wigfield & Guthrie, 1997). It is to the second of the PRD stumbling blocks—"failure to transfer the comprehension skills of spoken language to reading and to acquire new strategies that may be specifically needed for reading" (Snow, Burns & Griffin, 1998, p. 4)—that we turn our attention in this paper.

There already is much that we know about comprehension. We know, for example, that good readers are "constructively responsive" (Pressley & Afflerbach, 1995), meaning they are continuously updating their understandings of text as they are reading. Pressley and Afflerbach's research also indicates that good readers are aware of confusions; that they are busy making inferences, links, and summaries; and that they bring passion to the pages of text they are consuming. Then, too, as we will discuss shortly, there has been no shortage of research on comprehension strategies. We know clearly, for example, that teacher modeling of strategic reading is a critical component of reading comprehension instruction (e.g., Beck, McKeown, Hamilton, & Kucan, 1997; Duffy, Roehler, & Herrmann, 1988; Pearson, 1996; Pressley & Harris, 1990). We also know, as Pearson (1996) points out, that despite this body of research, teachers' emphasis on the direct teaching of reading comprehension strategies has decreased. This, he suggests, likely results from current attention to "the wholeness or integrity of literacy events" (p. 262). Like other advocates of the earlier, more abstract approach of comprehension strategy instruction, Pearson now recognizes that "what goes under the name of skill, strategy, or structure instruction is much more



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accessible, interesting, and sensible when it is embedded within a real problem, a real text, or a real body of content . . . [T]he best way to help students develop highly transferable, context-free literacy tools is to teach these tools as if they were entirely context bound" (p. 271). Pearson's (1996) statements align well with our growing recognition that learning occurs in a context (e.g., Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991).

We, too, are interested in the context of comprehension. Like colleagues Duke (1999), Kamil and Lane (1997), and Pappas (1991), we are keenly aware of the overly heavy emphasis in the primary grades on stories in the literacy diet. Although stories have been clearly shown to provide teachers (or parents) and children opportunities for comprehension-related discussions (e.g., Dickinson & Smith, 1994; Elliot & Hewison, 1994; Flood, 1977; Morrow, 1985; Ninio & Bruner, 1978; Pellegrini, Perlmutter, Galda, & Brody, 1990; Roser & Martinez, 1985; Snow & Ninio, 1986; Taylor, 1986; Teale, 1986), those discussions frequently follow somewhat predictable forms. Children learn to make inferences about characters' motives and relationships, actions and their consequences, and how the events are connected through temporal and causal structures (e.g., Trabasso & van den Broek, 1985; van den Broek, 1994). Reading stories, however, does little to acquaint children with the numerous non-narrative forms (e.g., Meyer, 1975; Taylor & Taylor, 1983), nor with an understanding of how a reader might make sense of the range of new concepts encountered in texts that are read to learn.

In this paper, we direct our attention to a period in young children's comprehension development that has received relatively little research attention. Following the leads of those working in first and second language acquisition (e.g., Krashen, 1976), we are calling this period "comprehension acquisition" to distinguish it from the more commonly researched "comprehension learning." To set the framework for considering this "comprehension acquisition" period, we briefly consider the role of the adult in language acquisition. We then review research in reading comprehension strategy instruction. After a short consideration of the current status of information books, we focus on comprehension strategies modeled during the read aloud of information books in a first-grade classroom. We conclude with a discussion of comprehension acquisition, setting it within the larger context of comprehension instruction.

## The Role of the Adult in Language Acquisition

Research attending to meaning-laden contexts and children's language and literacy development began in earnest in the late 1970s. Articles such as Snow and Goldfield's (1983) "Turn the Page Please: Situation-Specific Language Acquisition" suggested that future research attend to the nature of *input language*—what adults say to children during naturally occurring events. Cazden (1983), examining the interactions between adults and children, drew particular attention to three forms of adult "input" that occurred as parents communicated with young children: scaffolds, models, and direct instruction. Her descriptions of these three forms of discourse moves, important to the field of reading instruction, are addressed below.



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## Scaffolding

As an educational term, scaffolding was first employed by Bruner and his colleagues (Wood, Bruner, & Ross, 1976). They explained that scaffolding is "a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" (p. 90). As Bruner personally communicated to Cazden (1983), scaffolding would perform like a ratchet: The adult helps to hold a goal "in focal attention" (p. 6). Ninio and Bruner (1978) noted that parents are willing to interpret "an astonishing variety of responses" (p. 8) from infants, even a meaningless vocalization, as the child's intent to achieve a goal. To support this, parents often speak both parts of a dialogue, restating even children's physical gestures such as staring at a curtain, into turns of a dialogue. As children grow and become better communicators, adult or child can initiate the effort to promote understanding through a scaffolded event.

## Modeling

Though scaffolds and models "are much less separate in conversation than they are in theory" (p. 11), Cazden (1983) clearly distinguishes between the two. What is key to her distinction is the presence of a model of a mature behavior that is important in a society, not necessarily the child's active participation in the event. "Even if [children are present] only as onlookers or eavesdroppers" (p. 16), explains Cazden, they have the opportunity to add to their understandings of the desired behavior with each, as Lave and Wenger (1991) would put it, *peripheral participation*. Comprehension of text, however, unlike fishing or weaving, is not a visible act. Nor is it an audible act. A child observing an adult comprehending a text would see only the turning of pages and hear only the soft swish of the moving paper. The only way, then, that children can be privy to acts of text comprehension is when adults choose to make these acts audible.

## Direct Instruction

The last category of adult input language to which Cazden (1983) turned her attention as she examined parent-child discourse was direct instruction. In explicit instruction, "the adult not only models a particular utterance but directs the child to *say* or *tell* or *ask*" (p. 14). According to Cazden, "where direct instruction to 'do' or 'say' is given, that is probably an especially significant indicator of valued learning" (p. 16). The explicit instruction Cazden describes derives from ongoing contexts. Even writing in 1983, Cazden anticipated Pearson's (1996) realization: She expresses her doubts about the effectiveness of direct instruction in decontextualized school recitations.



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# Research in Reading Comprehension Strategy Instruction

In the sections that follow, we briefly examine the development of comprehension strategy instruction in which all three of Cazden's (1983) forms of adult input have been featured prominently. We look first at some of the earliest studies, examining issues raised by those researchers directly or indirectly. We next look at conclusions reached during what we consider to have been the prime of the comprehension strategy instruction emphasis, and then turn our attention to criticisms of comprehension strategy instruction. We conclude by providing a brief overview of the current stances on comprehension strategy instruction.

## Early Research in Comprehension Strategy Instruction

As research in reading comprehension strategy instruction began, researchers in cognition had already established that children's comprehension was developmental in nature (e.g., Flavell, Speer, Green, & August, 1981; Markman, 1977, 1979). Paris, in a series of articles written with various colleagues (Cross & Paris, 1988; Paris, Cross, & Lipson, 1984; Paris & Jacobs, 1984; Paris, Lipson, & Wixson, 1983) addressed this developmental aspect of reading comprehension as he researched Informed Strategies for Learning (ISL). Based on this research, Paris and his colleagues specifically addressed the need to consider appropriate ages for reading comprehension instruction (e.g., Paris, Saarnio, & Cross, 1986)—an early effort to suggest which aspects of reading or comprehension instruction might merit attention for which developmental stages in reading. Like many others during that period (e.g., Chall, 1983), Paris, Saarnio, and Cross (1986) expressed the position that for the youngest members of the elementary school, a certain threshold of decoding (and memory) would need to be exceeded before meaningful instruction in comprehension could take hold. Other key researchers working early in the comprehension strategy instruction paradigm, seemingly adopted a different position, demonstrating that their reciprocal teaching approaches were effective (albeit perhaps through listening as opposed to reading) for children at different ages (e.g., Palincsar, 1986; Palincsar & Brown, 1984; Palincsar, David, Winn, & Stevens, 1991).

### Distillations of research on comprehension strategy instruction

By the late 1980s, sufficient research had been conducted in comprehension strategy instruction that various researchers were ready to present summaries of what worked for their colleagues and teachers. From Pressley and his colleagues (Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989) and Pearson and his colleagues (e.g., Dole, Duffy, Roehler, & Pearson, 1991; Pearson & Fielding, 1991; Pearson, Roehler, Dole, & Duffy, 1992), we have derived eight cognitive acts that teachers, through modeling, scaffolding, and direct instruction, were to encourage students to perform. Students were to activate their prior knowledge. They were to monitor their comprehension, utilizing "fix-up" strategies when reading went awry. They were also to generate questions, answer questions, and draw inferences. They were to create pictorial mental imagery (generally during story reading) and mnemonic imagery (generally during informational or content reading).



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They were to activate their knowledge of text structure, considering story grammars as they read fiction and weighing the relative importance of ideas by attending to structure as they read nonfiction. Lastly, they were to create summaries of what they had read.

### Dissatisfactions with comprehension strategy instruction

Despite their very intensive scholarly efforts, reading comprehension strategy instruction researchers recognized the failure of their prescriptions to translate into common classroom practice. Rich and Pressley (1990) noted that "even if a strategy fosters an important reading goal, it may not be acceptable to teachers on other grounds" (p. 44). The teachers they studied expressed concerns about teaching rule-based story grammars and summarization strategies; training children in these practices required "a great deal of instructional time" (p. 57). Then, too, such practices seemed inauthentic, "inconsistent with natural reading" (p. 58). Pearson (1996), too, grappled with teachers' questions as to whether "direct, explicit instruction in how to use [strategies] will really help" (p. 267). Perhaps, he speculated, teachers' concerns arose because these strategies were made to seem "legitimate goals in their own right" (p. 271). Beck and her colleagues (1997) concur, suggesting that strategy-based instruction may have failed because of the attention paid to "the strategies themselves rather than to the meaning of what is being read" (p. 16).

## Current Research in Comprehension Strategy Instruction

Current emphases in reading comprehension research are now focused on what does/should occur *during* the actual readings of texts, rather than on the disembedded teaching of strategies. As with earlier studies, current work (e.g., McNamara, Kintsch, Songer, & Kintsch, 1996; Trabasso & Magliano, 1996) emphasizes the importance of drawing inferences, but the stress now is on connecting the information that the text lacks but that the reader may possess as prior knowledge. Though their work has focused on stories rather than informational text, Trabasso and his colleagues (Trabasso, 1994; Trabasso & Magliano, 1996) accentuate the need for *why* and *how* questions (as opposed to *what* questions) because of findings that readers who explain *during* reading have better understandings of the stories that have been read.

### Questioning the Author

Another during-reading approach to comprehension instruction that has been receiving particular praise at present (e.g., Armbruster, 1997; Pearson, 1996; Trabasso & Magliano, 1996) is *Questioning the Author* (Beck et al., 1997; Beck, McKeown, Worthy, Sandora, & Kucan, 1996; McKeown, Beck, & Sandora, 1996). Highlighted in this program is a mode of engagement described previously by Wells (1990) as "epistemic"—an interrogation of "the text in order to interpret its meaning" (p. 373). This stance has been adopted, explain Beck, McKeown, Hamilton, and Kucan (1997), to "depose the authority of the text" (p. 18), guiding children to recognize that authors, like the rest of us, are fallible human beings whose decisions and choices may negatively impact our understanding and enjoyment of their work. Questioning the Author-trained teachers use authentic texts—trade books and textbooks as well as distinctive discussion "moves." These moves serve to keep students focused on generating text-level understanding. They sig-

nal, for instance, that a particular student has raised an important point, or they demonstrate "turning back" in the text to locate something that the author presented earlier that is important to the present passage. Despite its numerous excellent characteristics, Questioning the Author, like other comprehension programs before it, remains a teacher-scripted event. It requires considerable time and preparation on the classroom teacher's part: Teachers perform close readings of the text, plan the stopping points for the discussions, and prepare the series of potential *Follow-up Queries* designed specifically to focus the discussion to the instructional agenda.

### Transactional strategies instruction

A third during-reading approach to comprehension instruction is found in Pressley and colleagues' transactional strategies instruction (e.g., Brown & Coy-Ogan, 1993; Brown, Pressley, Van Meter, & Schuder, 1996; Pressley et al., 1992). Derived from extensive study of ongoing classroom practices and built upon the work of Duffy and Roehler (Duffy and Roehler, 1989; Roehler & Duffy, 1984), this situated instruction is heavily determined by students' response, occurs across regular curricular areas, and includes all eight of the strategies we described earlier. Although Pressley and colleagues (El-Dinary, Pressley, & Schuder, 1992) explained that "the students and teacher act together" (p. 516) in the decision-making process of *which* of a number of strategies to apply *when*, readings of transcribed sessions indicate that teachers often dominate the direction of the discussion. However, instructional statements to children arise relatively logically from the context of the text and are embedded within a larger discussion focused on text meaning. As a direct instructional model, in Cazden's (1983) sense, Pressley and colleagues' transactional strategies instruction requires less teacher preparation time (assuming the initial discomfort and struggles are overcome; see, for example, El-Dinary, Pressley, & Schuder, 1992) than Questioning the Author. Of the various approaches we reviewed for this paper, transactional strategies instruction seemed more closely to resemble parental direct instruction than any other previous comprehension strategy instruction. Its effectiveness as instruction has been clearly demonstrated (Anderson, 1992; Brown et al., 1996; Collins, 1991).

In summary, different periods of comprehension strategy instruction have contributed to our current conceptions of appropriate approaches to support children's increasing competence in comprehending text. Early research, particularly that of Paris and his colleagues (1983, 1984, 1986), considered what types of instruction might be suited to what level of intellectual development; this line of thinking, however, has not been much visited since that time. Both earlier and current research on instruction stress establishing links between portions of text, activating prior knowledge, and developing awareness of both the author's prior and the reader's online (metacognitive) choices. These three categories provide a framework for considering comprehension-related talk during read alouds. In the next section of our paper, we turn our attention to the missing genre in primary classrooms—nonfiction (e.g., Duke, 1999; Pappas, 1991).



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## The Changing Status of Information Books and Their Role in the Classroom

During the time teachers moved toward literature-based reading programs (but see Short, 1999, for a discussion of how this movement is now in decline), there was simultaneously a steadily increasing interest in the place of information books in the elementary school curriculum (e.g., Mallett, 1992; Moss, Leone, & Dipillo, 1997). Some have celebrated the transformation of this genre from the "dry and solemn prose, sprinkled with a few charts or murky photographs" (Vardell & Copeland, 1992, p. 77) that many of us recollect from our own childhoods. Others, commenting on the privileged status of stories in classroom read alouds, have advanced their position that children need to be exposed to information book read alouds as well (e.g., Doiron, 1994; Graves, 1989; Moss, 1995; Pappas, 1991; Sanacore, 1991).

Research on the information book read aloud has begun, though actual data-based studies are few in number. The recent work of Pappas, her student Oyler, and their teacher researcher-colleague Barry (Oyler, 1996; Oyler & Barry, 1996; Pappas & Barry, 1997) has stressed the importance of genuinely interactive student-teacher-text events; Pappas and her colleagues have focused their attention on children's discourse moves and teacher's scaffolding support. Like others before her (e.g., Kerr & Mason, 1994; Mason, Peterman, Powell, & Kerr, 1989), Oyler (1996) has observed that genre influences the types of discourse produced by participants in read alouds.

We, too, had noted the changes in discourse different genres induced during read alouds (Smolkin & Donovan, 1993). After reading Pappas (1991), we became curious about how read alouds of nonfiction in first grade might differ from the more commonly occurring read alouds of fiction. We set about studying the responses of a class of first graders and their teacher to six storybooks and six information books; we collected the same type of data in a subsequent year when our teacher, Carol, moved to a different school. At that time, we examined our data through a reader response perspective, adapting the categories suggested by Martinez, Roser, Hoffman, and Battle (1992). Specifically, we collapsed the children's response categories entitled *interpreting, telling, personal associations,* and *literary associations* into an overarching category that we called *comprehension*. Looking at our raw numbers, we were astounded to find that our Year 1 children, listening to the six information books, produced 354 discourse moves in this category (93% of the total), as contrasted with their 42 moves in this category when they were listening to the six storybooks (7% of the total). When we repeated the study with a second, higher SES cohort of first graders at another school, our numbers looked rather similar: 219 discourse moves in our comprehension category during the information book read alouds (85% of the total), contrasted with 38 moves during the read aloud of fiction (15% of the total).

We also coded the discourse moves made by the teacher, Carol. Again, we modified the categories suggested by Martinez et al. (1992), changing *recapitulation* to *summarization* and expanding *modeling thinking about text* to *talk about text* to better capture what we were observing in the data. We then collapsed these categories into a new category we entitled *comprehen-*

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*sion strategies*. Combining the *informing* category with the *comprehension strategies* category, we noted that in Year 1, Carol produced 173 meaning-oriented moves during the nonfiction read alouds as contrasted with 50 such moves during her read alouds of storybooks (78% vs. 22%). For Year 2, Carol produced 228 meaning-oriented moves during the information read alouds as contrasted with only 27 such moves during her storybook read alouds (89% vs. 11%).

As we sought to understand what might be creating these very different frequencies in our "comprehension" categories, we noted that the information books were longer. The average number of words in the storybooks was 632; for the information books, that average was 1066. By chance, then, one might expect 60% as many comments and questions in the storybook read alouds; obviously, as our numbers demonstrate, length alone was not accounting for these differences. We were left to conclude that the information books were creating a situation in which both children and teacher were more engaged in meaning-seeking, meaning-making efforts.

In the next sections of our paper, we return to our original data. We examine the teacher Carol's discourse moves in the light of three major areas of comprehension strategy instruction we identified earlier, rather than our original reader response stance. Because context is, to our minds, critical in understanding instruction, we begin with careful descriptions of Carol's classrooms and the books used in the study.

## Context

### A Look at the Teacher and Her Classroom

In the first year of the study, Carol taught first graders in a public school located on a military base with children from a lower-middle-class background. In the second year of the study, she moved to a different elementary school that served an upper-middle-class population; both schools were located in the same city and district.

In both locations, Carol's classroom represented an exciting learning environment for young children. Finches chirped in a six-foot tall cage, gerbils did back flips, and books abounded. Carol, a recent university graduate, believed in a highly interactive classroom, and children's talk—to each other, to Carol—filled the school day. Her stress on interaction was found during read aloud events as well; Carol's children asked and told and shared and ooohed and yucked their ways through numerous book-reading events. Like the children in Oyler's (1996) study, they sometimes scrambled off the reading rug to bring Carol yet another book that shared intertextual links with the book that was being read.

Carol's preservice reading course had not included a heavy emphasis on comprehension strategies. She had learned about Ogle's (1986) K-W-L



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(Know-Want-Learn) comprehension strategy, and she knew that activating children's prior knowledge before a reading event was important in terms of schema theory. Upon starting her first job, Carol also began a master's program; her first course was "Young Children Moving Into Literacy," in which she read Pellegrini's (1991) attack on the concept of "at risk" emergent literates. She was fascinated by his stress on expository text, and subsequently, working with her then professor, began her own examination of information books in her classroom.

## Materials Selection

Recognizing that award-winning books might not necessarily be appealing to her students (e.g., Lehman, 1991), Carol located back copies of "Children's Choices" and hunted for recommended information books in her school and local public libraries. The six nonfiction books she ultimately selected were very different in their topics and text structures. Two fell rather neatly into the recognizable text patterns of "life cycle books" (Hepler, 1998)—Cole and Wexler's (1976) *A Chick Hatches* and Schilling's (1980) *Two Kittens are Born: From Birth to Two Months*. Lavies' (1989) *Tree Trunk Traffic* is a descriptive text. Its text, sometimes superimposed over two-page spreads of Lavies' typical excellent color photography, portrays the individual animal and insect life found in spring and summer in a maple tree.

As Raphael and Hiebert (1996) have noted, authors frequently combine text structural patterns; this is the case in Carol's next three nonfiction books. Knight's (1977) *Dinosaur Days* begins with a description of flora and fauna in the Age of the Reptiles, moves into a present time reminder that no people lived concurrently with the dinosaurs, continues with a section on scientists' discoveries and hypotheses, presents individual dinosaurs and their habits, then concludes with a single text page speculating on the dinosaurs' disappearance. Gibbons's (1988) *Sunken Treasure* similarly mixes structures, narrating two histories—first, the sinking of the Spanish treasure ship *Atocha*, and second, the search for and ultimate recovery of *Atocha*'s treasures. The book concludes with its own almanac of treasure hunts and a picture history of diving. Gibbons' detailed illustrations combine pen-and-ink with watercolors, generating a more "picture storybook" look. The final book, de Paola's (1978) *The Popcorn Book*, represents the controversial "fuzzy" (Pappas, Kiefer, & Levstik, 1995), "grey" (Leal, 1993), or "blended" (Skurzynski, 1992) informational picture storybook. The book consists of two texts. The first, a simple story displayed through cartoon-like characters with speech balloons, is about two brothers who have decided to make popcorn. The second is informational; one of the boys wonders why their mother keeps popcorn in the refrigerator; he decides to read aloud to his brother from a hefty tome to find his answer. These are the information books that Carol read to her students.

The procedure was simple; Carol turned the tape recorder on when she started to read each book, and turned it off when she deemed each read aloud event had ended. She had no intent to "teach comprehension strategies," for she did not know that much about them. She simply added these books into her regular, twice daily, interactive read aloud sessions.



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# Comprehension Within the Interactive Information Book Read Aloud

In this section, we present examples of the interactive student-text-teacher discourse that occurred during Carol's read alouds of her selected information books. We place these examples within the three emphases of comprehension instruction research that we identified in the comprehension strategy instruction literature review: establishing links between portions of text, activating prior knowledge, and developing an awareness of authors' decisions and readers' online (metacognitive) thinking. We also note the type of adult assistance that Carol, as the knowledgeable adult or "master comprehender," employed as she negotiated both text and students in these literacy events.

## Establishing Links Between Portions of Text

Texts, in a sense, are strings of words and collections of clauses and concepts. Readers, as good comprehenders, have the responsibility to make the pieces of the text itself connect. In the sections that follow, we present examples of Carol modeling, scaffolding, and explicitly instructing children in the establishment of links between words in a sentence, between two sentences, between ideas in the text, and between ideas and the text's structure.

### Links within a sentence

In this first example, Carol is reading from *Sunken Treasure*. She pauses to check the children's understanding of a word.

Carol: "Now the treasure can be brought to the surface. Salvage boats are moved in. Divers descend and crewmembers lower baskets over the side to them." What does descend mean? We learned this word when we talked about hot air balloons. Pete?

Pete: It's like

Child: lifting it up

Child: lifting it up

Carol: Say what you were going to say, Pete.

Pete: It goes down.

Carol: Excellent. Down. That's right. And you can tell that by the meaning of the sentence: "Divers descend and crewmembers lower baskets over the side to them." So, they're going down.

Content knowledge and vocabulary are very highly interdependent. Knowing that the children have encountered the word in a previous unit of study, Carol first attempts to have them bring their prior knowledge to bear, an effort that proves only moderately successful. Carol then explicitly instructs the children in a strategy for dealing with text: The known words in a sentence, the context, can also provide the meaning of a relatively unfamiliar word.



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Links between sentences

In the next example, from the reading of *Two Kittens Are Born,* Carol, in her commentary on the text, models the linking of the two sentences she has just finished reading.

Carol: Look! "13th Day. The white kitten has both eyes open. The light bothers the black kitten, and he looks away." So, their eyes are still sensitive to the light.

In a sense, the text of *Two Kittens Are Born* may be deemed inconsiderate (e.g., Armbruster & Anderson, 1985). The second sentence does not explicitly state that it is the black kitten's eyes that are bothered by the light. Carol's modeling links these two pieces of text—"their eyes"—and provides a summary statement as well.

Texts often fail to make causal connections specific and explicit enough for their readers. Carol, following a lengthy discussion of the sinking of the *Atocha* in Sunken Treasure, scaffolds the children's construction of an inference on causality.

Carol: All right, it hit the reef. Why did it hit the reef? Because it got... [No response from children.] What did it [the book] say? It said there was...
Child: A storm.
Carol: Storm, right.
Child: They couldn't see.
Carol: Right, it did [say that]. Because they couldn't see, and if they were out
Child: Were the people surprised?
Child: The storm blew it into the rocks.
Carol: Exactly.

As Carol scaffolds, she reminds the children that needed pieces of information are in the text. This example of determining a cause represents the why type of explaining Trabasso (Trabasso, 1994; Trabasso & Magliano, 1996) has stressed as important in story comprehension. Here, it seems to be important in comprehending narrative nonfiction as well.

In the two examples above, the linking efforts were teacher-initiated. Because Carol's information book read alouds were genuinely interactive, students were comfortable in putting forward their own comments and questions. Our next example is student-initiated; one of the students presents a "why question." This discourse arises from the child's careful observation of a picture in *A Chick Hatches.*

Child: That yellow stuff wasn't there. [Why did it disappear?]
Carol: Well, it might have dried up, or it might be a little bigger. Let's keep reading and see. "Inside the membrane, the fetus looks more and more like a chick. Notice how much of the yolk has been used up. Every day now until hatching some of the yolk will be drawn into the chick's body."
Child: Why?
Child: Why? Does he eat the egg?
Child: Oh, gross.
Carol: Well, remember, remember the blood vessels are in the yolk and they get the food from the yolk, so yeah, it uses it up. He



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doesn't eat it with his mouth, but he eats it through his blood vessels.

Child: [whispering] Wow.

Although the child appears to offer a comment ("That yellow stuff wasn't there"), Carol appropriately responds as though the child has asked a question. She offers two hypotheses and then supplies explicit metacognitive information—if we read further, the text may answer the question we've posed. In fact, it does, but new text statements prompt the children to look for another causal link—why or how is the yolk drawn into the chicken's body? So, Carol responds by modeling the comprehension strategy of linking the current information to previously presented information. She begins her response to her students' questions by pulling information from an earlier section of the text. However, she takes the children along with her as she did so—"remember, remember"—indicating that another metacognitive act is entailed. This is really a very complicated interchange in terms of the various types of comprehension supported and demonstrated.

### Summarizing: Pulling together ideas in the text

Rich and Pressley (1990) found that teachers regarded summarization instruction as time-consuming and perhaps even "inconsistent with natural reading" (p. 58). Carol, however, managed to incorporate it smoothly into her discussions, as can be seen quite clearly in this excerpt from *Two Kittens Are Born*.

Carol: "Fourth day. The white kitten rests under its mother's chin. It decides it is time to eat. The black kitten has the same idea." What do babies do most? They...

Child: They get up.

Carol: eat. Now they are little tiny babies. What have we learned so far that they do? They eat and then they sleep.

Child: sleep

Carol: And that's about all that they do.

The discourse move that Carol models might be termed "recapping" by Beck and her colleagues (1997); it is a "pull[ing] together and summariz[ation of] major ideas" (p. 92). Unlike the summarization strategy, which was to be employed after a text was read, this is an online demonstration of pulling text ideas together.

### Examining aspects of text structure

As comprehension research has shown repeatedly, awareness of text structure aids readers' comprehension. In the excerpt that follows, Carol pauses to discuss the blended nature of *The Popcorn Book*'s structure.

Carol: "And 100-year-old popcorn kernels were found in Peru that could still be popped." Now. This guy is doing different... [It's] kind of like two stories [are] going on. What is this part giving us?

Child: [together] Information

Carol: It is. And what is this doing?

Child: It's telling you.

Carol: It's giving us, right, the steps of how to make the popcorn.

Child: And he has a big ole speech bubble.





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Carol: Yes, because he's reading about this, remember? And so, his speech bubble is him reading from this book about this [pointing to pictures of native peoples].

By interrupting to comment on the way this book "works," Carol models attention to text structure, and then scaffolds her children's understanding that noting a text's structure may be critical in understanding its presentation of ideas.

## Establishing Links to Prior Knowledge

If there has been a dominant theme in comprehension research, it has been the activation of prior knowledge—the making of links between the text and existing knowledge. As Pearson and Fielding (1991) have noted, "instruction which promotes the generation of virtually any association can improve comprehension" (p. 837). Rich and Pressley (1990) found that teachers as well as researchers recognize this to be very important. As children listen to information books, they seem to be actively working to place the newly presented information into their existing understandings (Oyler & Barry, 1996). Occasionally, as has been noted by those who study conceptual change (see Guzzetti & Hynd, 1998 for a current perspective), the new information conflicts with what children already "know." In the sections below, Carol can be seen guiding, supporting, and working through children's links to what they know.

### Creating mental imagery

What children know, of course, derives from more sources than units studied in school. Children know from observing the various forms of life around them. In this example, Carol, reading from *Dinosaur Days,* calls on children to bring their prior knowledge to bear, eliciting a physical enactment rather than a verbal description.

Carol: "Dinosaurs came in all sizes and shapes. The smallest were no larger than chickens." How big is that?
Children: [show with their hands] About this.

As we noted earlier, Pressley et al. (1989) advocated that teachers include the creation of mental imagery to support comprehension. Carol scaffolds her children in connecting text to a mental picture.

### Creating an analogy

In the next example, Carol models how referring to life experiences aids in forming a supportive analogy as she reads from *Two Kittens Are Born.*

Carol: "21st day. The white kitten practices walking. Her front legs are strong but the hind legs drag."
Child: [laugh]
Carol: It's kind of like when a little kid is learning how to walk and they fall down. Kittens still have to do the same thing and learn.
Child: Ms. D.—um, my brother is learning how to walk.
Carol: He falls down a lot, huh? Until their legs get strong.

Not only does Carol foster the children's links to prior knowledge, she perhaps more importantly models how readers, confronting new ideas, may need to consider comparisons with their own lives. In her interactive style, Carol welcomes a child's link to her own family, weaving it back into the text topic.

### When prior knowledge is wrong

Children also "know" about a domain because of their encounters with texts—the virtual worlds of television, movies, and books. In the example below, the children are discussing *Dinosaur Days*' assertion that when we see cartoons or comic strips where cavemen ride dinosaurs such portrayals are simply make believe.

Child: I seen it.
Child: Oh, yeah. It's true.
Child: I saw a show.
Child: I think it's true.
Carol: Well, this [book] is saying that if you've ever seen a caveman story, or a caveman that had a dinosaur for pets, kind of like the Flintstones, that's not true. It's not true. The dinosaurs were dead a long time before
Child: Hey, cavemen
Carol: any people were here—even cavemen. That's not true; that's just make believe.
Child: But what about when they eat them?
Carol: Well, that's what some of the stories say, Don, but that's what this book is saying is not true.

This section of *Dinosaur Days* is actually refutational, meaning it contrasts a science misconception with the scientifically established concept. Though refutational expository texts have been identified as especially effective in influencing elementary school children's thinking (Guzzetti, Snyder, Glass, & Gamas, 1993), the children are holding fast to their prior knowledge. Much of what children "know," they have gleaned from images on television ("I seen it"). With movies like *Jurassic Park* and cartoon shows and movies like *The Flintstones*, it is easy to see how the children have come to their beliefs. Carol attempted to assist them by pointing to a genre distinction—those are stories, but this book, an information book, is saying those stories are not based in fact. Even with a refutational text and teacher explanation, the children seem unconvinced. Perhaps this misconception has proven particularly powerful because of the many visual images the children can recall from their film-based experiences. Clearly, this is an instance where the activation of prior knowledge is detrimental to the children's learning from text.

### When the text and the known generate hypotheses

Sometimes text ideas and seemingly unrelated prior knowledge mingle in the children's minds, causing them to wonder about what is possible. In this excerpt, Carol and her children are reading *The Popcorn Book*. Carol finishes reading the "informational" part of the text that discussed how the Iroquois made popcorn, and stops to comment on the "story" part of the text where the two brothers are popping corn.

Carol: [providing an oral commentary on the story] Okay, now it's hot enough [for the brothers] to add a few kernels.
Child: What's a kernel?
Child: Like what you pop.

Carol: It's a seed.

Annie: What if you, like, would you think [of] a popcorn seed? Like a popcorn seed. Could you grow popcorn?

Carol: Oh, excellent, excellent question. Let's read and we'll see if this [book] answers that question, and if not, we'll talk about it at the end.

Carol's response to Annie marks the unique nature of her hypotheses ("excellent, excellent question"). Carol then offers an instructional invitation ("Let's read and we'll see if this answers that question"). In thinking aloud, she next models an important piece of information about books—they may not contain the answers to our questions. If they don't, we may have to plan a different approach to finding our answer.

## Considering Author and Reader Decisions

In this section of the paper, we have combined two areas identified as important in previous comprehension research. Each of these strategies requires thinking about thinking. We will look first at discourse that arose concerning authors' decisions. We will then look at discourse surrounding Carol's decision to reread a section of text.

### Considering authors and the texts they have created

Wells (1990) expresses that "texts are representations [that can be] challenged, and even improved upon" (p. 377). This is the same idea that underlies Beck, McKeown, and colleagues' Questioning the Author program. It entails a reader perspective that authors have certain responsibilities regarding the presentation of their texts as well as the awareness that authors have made choices in those presentations and that both of those are open to critique. In the examples that follow, Carol and her students employ these perspectives.

***Authors have responsibilities.*** An extension of the notion that authors may be fallible is the awareness that sometimes they should seek help with their texts. Information books particularly promote this idea through the acknowledgments that authors make. In the example below, Carol directs children's attention to the idea that writers of information books need to check their facts.

Carol: And, listen to this. "The author wishes to express his thanks to Dr. Eugene S. Gaffney of the American Museum of Natural History for checking the accuracy of the manuscript of this book." That means they [the author] asked someone who knows a lot about dinosaurs at the Natural History Museum if this book was accurate, if the facts in this book were true.

Of the six books in Carol's text set, four contain acknowledgments; they are not part of the running or connected text of the books. However, because Carol chooses to include them in her reading, these pieces of front matter afford an important opportunity to think about what authors, particularly authors of information books, should do. While Carol models a comprehension strategy of rephrasing text into one's own words, she also introduces her children to the idea that information book authors must check the accu-



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racy of their texts. Children's literature experts (e.g., Huck, Hepler, Hickman, & Kiefer, 1997) have long considered accuracy of facts to be a primary criterion in the evaluation of information books.

***Authors and illustrators have made choices.*** In the following example, Carol's reading of another book's front matter—in this case, the dedication—sparks a student response to *Two Kittens Are Born.*

Carol: The dedication is "To Cassey, a natural caring mother who graciously allowed me to observe and photograph her kittens." She used black and white photographs.
Child: Why?
Carol: I don't know why she didn't use color photographs.
Child: Probably because it hurts their eyes.

The question of this particular author/illustrator's medium reflects a beginning level of critique. By her "I don't know" response, Carol models for the children that sometimes, despite our efforts at comprehending a work, we may remain puzzled about the reason for the author's decision to employ certain artistic forms or devices.

### Demonstrating (and commenting on) our own fix-up strategies

Monitoring comprehension, as we discussed earlier, is one of the five key strategies that Pearson and his various colleagues have stressed. In this next example, Carol, reading from *Tree Trunk Traffic,* runs into a poorly constructed section of text. This forces her to stop her reading.

Carol: "Insects live on the tree, too. This big cicada just crawled out of its brown, shell-like skin. For several years." (Carol pauses. The next word in the text is "it".) Let's start back here. "Insects live on the tree, too. This big cicada just crawled out of its brown, shell-like skin."
Child: [interrupting] We already read this.
Carol: I know, but see, sometimes if you stop, it helps [to reread the previous sentences]. It didn't make sense just reading [further in the text].

For us, this is a particularly important example in that children rarely are participants in a literacy event where the adult speaks about a comprehension failure, and it occurs because one of the children questions Carol's decision to reread. This compels Carol to make public her reader metacognition. Although she does not offer children the complex reason for her pause—reader awareness that the pronoun "it" should have been substituting for the noun "skin" but is instead substituting for the noun "cicada"—she does make explicit the reason for her action. She speaks about comprehension failure ("it didn't make sense") and its result ("if you stop"). She then directly instructs children in a strategy to rectify the problem ("it helps to reread").



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# Discussion

We now turn our attention to the key features of the comprehension situation in Carol's read alouds of information books, beginning with a look at Carol's discourse moves. Following that discussion, we advance our notion of comprehension acquisition, setting it within a developmental consideration of comprehension instruction. We next consider the place of informational texts within that developmental framework.

## Considering Carol's Discourse Moves Through Cazden's (1983) Lens

Carol, operating more like the average middle-class parent than any of the teachers participating in any of the comprehension strategy instruction experimental treatments, engaged in information book read alouds with her students; her read alouds spawned the most genuine of meaning-creating efforts. Carol, like Cazden's parents, scaffolded often. She interpreted a child's turn—"That yellow stuff wasn't there"—as a question and provided scaffolding for the child's effort to understand what was occurring in the text. She recognized, as teachers often do when they read aloud, that it was the text that has failed to make a clear meaning link. Consequently, she scaffolded the children's creation of the missing text link, as we saw in her discussion of the *Atocha*'s crash into the reef. Certainly, then, scaffolding is an important part of the interactive information book read aloud event.

Like a parent working with a child, Carol also provided explicit instruction during this meaning-seeking literacy event. She told children that the context of a sentence could guide a reader to find the meaning of a word. She informed them that, if they had questions during reading, reading further would possibly answer those questions. She also indicated that the answer might not lie in the text, but might need to be sought elsewhere. She apprised the children that information book authors needed to be sure of their facts. She explicitly told the children that when comprehension failed, rereading the text was a very useful strategy. And all of this "explicit" instruction occurred at the very moment children, mining with Carol for the meaning of the texts, were most ready to receive it.

Finally, Carol modeled many acts of comprehension. She reread, rephrased, and summarized. She modeled creation of imagery and analogy by connecting to prior experience. She created hypotheses to answer questions that arose during reading and then read further to see if those hypotheses were correct. She modeled attending to text structure. She modeled being uncertain about author choices but being certain that she had experienced a comprehension failure. She did not, however, at any point say, "Okay, this is an important strategy that I've just modeled for you." Her modeled comprehension was unplanned, arising in response to features of the texts she and the children were reading or to uncertainties expressed by her students. Her students, like children participating in other naturally occurring events, were able to observe mature behaviors in the context that called for them.

Now, clearly, the notion of teacher modeling during think-alouds of comprehension is not new (e.g., Lorge, 1957). In fact, teacher modeling of strategic

reading has been an important component in all models of comprehension strategy instruction (e.g., Beck et al., 1997; Duffy, Roehler, & Herrmann, 1988; Palincsar & Brown, 1984; Pearson, 1996; Pressley & Harris, 1990). For us, the key question is when and where and over what length of time such moments occur. If teacher modeling of comprehension behaviors occurs only as part of direct comprehension instruction, children's need to observe the adult model of behavior in a genuine literacy event remains unmet. If audible or visible, unplanned, unstaged models of adult behaviors are a critical part of children's language development, then, perhaps, they are equally important as a part of children's comprehension acquisition—the notion to which we now turn our attention.

## Acquisition Vs. Learning: A Useful Distinction in a Developmental View of Comprehension

Writing in 1976, second language researcher Stephen Krashen proposed his Monitor Theory of language acquisition/learning. In this piece, Krashen suggested that there are two separate knowledge systems that underlie children's second language performance. The first he termed acquisition; this he saw as operating in a largely subconscious fashion. The second, which he deemed less important, was the learned system; this was created during periods of formal instruction. We believe these two systems may represent new ways for us to conceptualize reading instruction and reading environments across the elementary school grades.

For us, the learning of skills and strategies required for various acts of reading might best be conceptualized as periods that emphasize acquisition and periods that emphasize direct instruction. For example, early literacy research has clearly shown that very few children have failed to acquire encounters with print (e.g., Heath, 1983; Taylor and Dorsey-Gaines, 1988; Teale, 1986). No adult has necessarily instructed the children in print; they have often simply acquired an awareness of it as part of their environments and their families' ongoing activities. This prior exposure to print supports the direct instruction for young elementary students advocated in models such Chall's (1983). Associating letters and their sounds, writing letters from sounds, listening for sounds, and looking at patterns of print do not require the same multidimensional reasoning abilities as must be brought to bear in the comprehension of text; they represent associative learning. Such instructional activities are reasonable for kindergarten and first-grade children, building on children's acquired awareness and suited to their cognitive reasoning abilities.

## A Developmental Approach to Comprehension Acquisition and Comprehension Instruction

What we are proposing is a similar sequence for comprehension. We are advocating a period of comprehension acquisition that quite logically could begin in preschool and continue through first and perhaps even part of second grade. Teachers (and the parents they encouraged to do so) would read



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a range of genres (including the informational texts for reasons we discuss below). They would read these texts in an unplanned, interactive manner, similar to that demonstrated by Carol in our earlier examples, in which the focus would be on the children's meaning making. Such efforts would allow children to begin to internalize the types of thinking and discussion (Vygotsky, 1978) that surround some of the very texts that so often prove sources of great difficulty in children's upper elementary lives.

If we turn our attention to existing developmental models of reading, noting the roles and responsibilities of young readers, the earliest stages of these models have children attending only to decoding or recognition of print (e.g., Chall, 1983; Ehri & Wilce, 1985). Even Paris and his colleagues, with their very strong focus on metacognition and development, asserted, as we have noted earlier, that a certain threshold of decoding was necessary before strategies such as skimming, rereading, using context, planning, paraphrasing, and summarizing could "play [a significant role] in children's reading comprehension" (Paris et al., 1986, p. 121).

But, if we listen to voices from the field of developmental psychology, we hear that certain researchers see development as more domain-specific than our Piagetian heritage might have suggested previously. For example, while continuing to acknowledge substantial changes in children's cognitive power during a period referred to as "the 5 to 7 shift" (see Sameroff & Haith, 1996), Morrison, Griffith, and Frazier (1996) have been able to examine to what extent growth in particular literacy skills, which have been targeted through direct instruction, transfers to other related areas.

> [E]arly instruction in word decoding is expected to naturally produce spin-off benefits in vocabulary skills and general knowledge. Findings from this study cast doubt on the validity of this transfer assumption. The pattern of results ... revealed a striking degree of specificity in growth of literacy skills that, on the surface, seem cognitively and educationally related to one another. (p. 179)

We interpret these results, obtained through their clever "school cutoff" methodology, as meaning that growth in knowledge about print does not necessarily mean growth in the background knowledge, concepts, and vocabulary children will need to make sense of the expository texts that will dominate their later school lives. Like the English-as-a-New-Language learner, children's conceptual growth during their glued-to-print period (e.g., Chall, 1983) may be diminished during a time when language, which in many senses has already become a transparent medium, suddenly presents itself once again as a puzzle that requires considerable attention to form. It is our contention that a comprehension acquisition curriculum would ensure that growth in concepts and vocabulary would occur simultaneously with growth in decoding. We are not suggesting that children will be able to transfer their acquired knowledge to new texts. We are inclined to accept the wisdom of the many teachers with whom Pressley has spoken over the years: Transfer of instructed comprehension strategies takes time. It also undoubtedly takes the mental capabilities that develop during the elementary years.

We understand clearly that the ability to be "planful," to approach texts multidimens[illegible]lly, as must occur during successful comprehension instruction, is a for[illegible]f reasoning that is developmental. As Siegler (1996) explains, thoug[illegible]ve might train five-year-olds to reason multidimensionally, they will



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be far more likely to revert to unidimensional reasoning than their older peers will. This is what the 5- to 7-year shift is really about: Children during this period gain the ability to reason in substantially different ways. As Paris's research indicates (e.g., Paris & Jacobs, 1984), this increase in metacognitive and reasoning abilities continues developing throughout the elementary grades. Although Paris and Jacob's third graders and fifth graders both improved in their comprehension abilities as a result of direct instruction in comprehension strategies, fifth graders "exhibited greater reading awareness and comprehension than 8-year-olds" (p. 2091). We take these research findings to indicate that there is likely a developmentally "better" time to begin comprehension instruction.

At some point in the second-grade year, most likely, actual instruction of the simplest of comprehension strategies would begin. This instruction would continue across the elementary grades with an increasing expansion of children's repertoire of strategies. Our review of comprehension strategy instruction, as we have suggested earlier, has led us to be most impressed with transactional strategies instruction. We most particularly like the stance (e.g., El-Dinary et al., 1992) that recognizes that, for both teachers and students, the world of comprehension strategies is best seen as developmental and long term. We are convinced that comprehension of text, the single most important ability developed in the elementary school setting, merits schoolwide attention, with a carefully conceived period of comprehension acquisition followed by an exceptionally carefully articulated approach to comprehension instruction. We accept the conclusions of our colleagues Taylor, Pearson, Clark, and Walpole (1999): The most effective of their "beat the odds" schools had "a commitment to strong, collaboratively forged schoolwide programs" (p. 50).

## The Role of Informational Texts in Comprehension Acquisition and Comprehension Development

We have, throughout this paper, stressed the comprehension that is fostered through information book read alouds. In the sections that follow, we explain the significance of these texts to us and their potential in the lives of developing comprehenders.

### The differences between story and informational text read alouds

Our emphasis on the inclusion of information book read alouds is, as it is for our colleagues Pappas (1986, 1987, 1991, 1993) and Duke (1999; Duke & Kays, 1998), partly a reflection of our concern that young children have opportunities to acquire the linguistic features, including text structures, of the various expository genres. We are, however, far more focused upon the multiple opportunities for text comprehension-related discussion that this genre not only offers but also appears to promote. Those who have studied adults reading both information books and storybooks aloud to children (e.g., Kerr & Mason, 1994; Mason, Peterman, Powell, & Kerr, 1989; Oyler, 1996; Smolkin & Donovan, 1993) have noted that different types and different amounts of adult and child talk occur in these two very different genres. We contend that these differences occur in response to the two distinct functions that the two genres serve.

Storybooks are meant to entertain. Children and adults both can become caught up in story read aloud experiences. Some adults will even read a storybook with no comments or questions at all. Perhaps they believe that the read aloud, an aesthetic experience like the viewing of an opera or a movie, should proceed without interruptions for its fullest effect (J. Whitehouse, personal communication, 1991). Perhaps the adult is simply following the culturally appropriate presentational style of story telling found in his or her community. Or perhaps the adult, caught up in the characters and the complications of their lives, enveloped by the entertainment provided by the book, simply becomes plot-driven, resulting in a reading that overrides the child-oriented meaning-creating experience.

This seems never to be the case with the reading of information books. Although information books have become much more entertaining and do afford aesthetic experiences for many readers (e.g., Spink, 1996), their real function is to inform. Adults, whether untrained parents (Smolkin, Yaden, Brown, & Hofius, 1992 ) or classroom teachers, present these texts for their child audience with a great deal of text-related talk—links to prior experience and numerous explanations—all in an effort to ensure that the child audience can grasp the information in the text. The frequency counts we reported earlier indicate to us that information book read alouds offer numerous opportunities for nonliterate children to acquire a large, distinct range of written text comprehension principles.

### The conceptual power of informational texts

Once more, we wish to point to the power that informational texts have to add to children's background knowledge and existing vocabularies. Carol's children had heard the word "descend" previously; reading about the recovery of the *Atocha* offered an opportunity to consider this word in a second context. We are struck by the number of concepts and connected vocabulary that our few examples show these information book read alouds offering to the six-year-old children in Carol's class—membrane, blood vessels, reef. If, as demonstrated by Duke & Kays (1998) and Pappas (1993), children can acquire linguistic features, then, surely, they can acquire the language and the ideas those features surround.

### The motivational power of informational texts

We must also recognize the tremendous power that information books have for many children (e.g., Caswell & Duke, 1998; Fielding & Roller, 1992; Fresch, 1995). For certain children, stories do not hold a strong pull. From our own research (Donovan, Smolkin, & Lomax, in press) and our own life experiences, we know that, for little boys particularly, information books are a genre they happily self-select if classroom libraries contain such texts. And, from Pellegrini's (1990, 1991) research, we are aware that informational texts may have greater significance to particular ethnic and racial groups than do our Euro-centered stories. Then, too, we are aware of research that indicates that effective teachers have higher levels of student engagement (Fisher et al., 1980). Part of student engagement is clearly related to the texts that interest them. Presentations of information books throughout children's school careers, from their beginning use during comprehension acquisition to their later use in comprehension instruction, give clear indications that such texts can be as enjoyable, captivating, and meaningful as stories.

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## The Importance of Interaction in the Information Book Read Aloud

As we began with a look at the types of adult "input" that parents offer in their communications with their children, so we wish to conclude by looking at a critical feature of those, and Carol's, communicative practices—the contributions of children. To put this in its most succinct form, if children do not have the opportunity to participate, there is nothing for adults to genuinely scaffold. If, however, children have been allowed to be interactive, their own queries and comments frequently compel adults to make not only the meaning but also their own cognitive strategies visible.

For Carol, it seems that allowing children to interact came very naturally. This is not the case in every classroom. Often, when teachers contemplate genuinely interactive read alouds, they find themselves feeling a bit daunted: What if the children's comments do not contribute to a substantive discussion? What if they pull everyone off task?

Anne Barry, the Chicago teacher researcher who worked with both Pappas and her student Oyler (Oyler, 1996; Oyler & Barry, 1996; Pappas & Barry, 1997), spoke of the risks she had to take to adapt her read-aloud style so that authority could be shared. For her, it was hard work (Pappas & Barry, 1997, p. 231). Doing so, however, allowed her to get to know both her students and their cognition better. And sharing control did not mean losing control. When Anne considered that the discussion had moved too far afield, she comfortably guided her group back into the text—"Okay, should we start?" (Oyler, 1996, p. 156).

For us, though, the significance of interaction extends far beyond the issue of authority. If Carol had been unwilling or hesitant to share control of the talk surrounding these information book readings, her students would have been unable to comment on their perceived changes in her reading style ("We already read this"). And her embedded, explicit instruction ("I know, but, see, sometimes if you stop, it helps [to reread]") would never have occurred. For those interested in situated comprehension acquisition, working toward an interactional read-aloud stance is clearly a critical component. Comprehension acquisition certainly cannot occur when the community of practitioners consists of a single member, the teacher. Rather, interchange of a broadening number of ideas must be encouraged and fostered if comprehension is to be a social practice in which apprentice comprehenders can legitimately participate (Lave & Wenger, 1991), as their roles and responsibilities (Rogoff, 1996) in acts of text comprehension steadily increase across the elementary years.

# Future Research Efforts

Our purpose in this paper has been to describe a vision of comprehension development over preschool and elementary years. This vision contains within it many questions for future research. In this final section, we pose some of the questions that have occurred to us.



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First, we believe that much more research is needed to examine the nature of comprehension acquisition. Our view of the significance of informational texts, while based on our research and the anecdotal reports of many, many students, needs further validation. To this end, we believe that the nature of group text interpretation with story and information books must be explored further. Along those same lines, we feel that acts of comprehension exhibited during the read alouds of the various subgenera of informational texts might provide instructional information.

Second, with a recognition of children's developing multidimensional reasoning abilities, we think that developmental research with the eight cognitive acts identified in our review of comprehension strategy research would allow us to know which of the strategies represent the least and greatest cognitive demands. This knowledge, in turn, could be used to design and then test a comprehension strategy instruction program that would become increasingly intensive over the elementary grades. Within this line of research, we think additional questions should be asked: How long will it take for second graders to learn whichever strategy has been identified as most appropriate for their developmental level? When is the best time for teachers to move to instruction of several strategies?

Third, we believe that teacher training for both comprehension acquisition and instruction merits considerable attention and research. Our belief, based on our own research with low-income adults working with children (Smolkin & Suina, 1999) and from teacher statements made in El-Dinary et al.'s (1992) examination of teacher confidence as they worked with the SAIL program, is that videotapes provide critical models. We also know, from El-Dinary et al.'s research, that high levels of support for comprehension instruction must be in place for teachers to comfortably work with comprehension strategies in their classrooms. We need long-term research that examines various types, duration, and effectiveness of various staff development models. We agree with colleagues Taylor et al. (1999) that "there is no single quick answer to the question of how best to reshape a school's reading program and the repertoire of instructional practices teachers employ in of the quest of helping all children read well" (p. 50). We believe, however, that such research merits far more attention than it is presently receiving.

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## About CIERA

The Center for the Improvement of Early Reading Achievement (CIERA) is the national center for research on early reading and represents a consortium of educators in five universities (University of Michigan, University of Virginia, and Michigan State University with University of Southern California and University of Minnesota), teacher educators, teachers, publishers of texts, tests, and technology, professional organizations, and schools and school districts across the United States. CIERA is supported under the Educational Research and Development Centers Program, PR/Award Number R305R70004, as administered by the Office of Educational Research and Improvement, U.S. Department of Education.

***Mission.*** CIERA's mission is to improve the reading achievement of America's children by generating and disseminating theoretical, empirical, and practical solutions to persistent problems in the learning and teaching of beginning reading.

## CIERA Research Model

The model that underlies CIERA's efforts acknowledges many influences on children's reading acquisition. The multiple influences on children's early reading acquisition can be represented in three successive layers, each yielding an area of inquiry of the CIERA scope of work. These three areas of inquiry each present a set of persistent problems in the learning and teaching of beginning reading:

**CIERA INQUIRY 1**
Readers and Texts

***Characteristics of readers and texts and their relationship to early reading achievement.*** What are the characteristics of readers and texts that have the greatest influence on early success in reading? How can children's existing knowledge and classroom environments enhance the factors that make for success?

**CIERA INQUIRY 2**
Home and School

***Home and school effects on early reading achievment.*** How do the contexts of homes, communities, classrooms, and schools support high levels of reading achievement among primary-level children? How can these contexts be enhanced to ensure high levels of reading achievement for all children?

**CIERA INQUIRY 3**
Policy and Profession

***Policy and professional effects on early reading achievement.*** How can new teachers be initiated into the profession and experienced teachers be provided with the knowledge and dispositions to teach young children to read well? How do policies at all levels support or detract from providing all children with access to high levels of reading instruction?

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